# THE EFFECT OF CRYOTHERAPY ON ARTERIOVENOUS FISTULA PUNCTURE PAIN AMONG PATIENTS ON HEMODIALYSIS IN SELECTED HOSPITAL AT TRICHY


*Dissertation submitted to*

**THE TAMILNADU DR. M.G.R MEDICAL UNIVERSITY**

**CHENNAI**

IN PARTIAL FULFILLMENT OF REQUIREMENT

FOR THE AWARD OF DEGREE OF

**MASTER OF SCIENCE IN NURSING**

**APRIL 2016**

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*Certified that this is the bonafide work of*

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_____ _____

**INTERNAL EXAMINER** **EXTERNAL EXAMINER**

# DECLARATION

**I, 301411702** here by declare that this dissertation entitled **A STUDY TO ASSESS THE EFFECTIVENESS OF CRYOTHERAPY ON ARTERIOVENOUS FISTULA PUNCTURE PAIN AMONG PATIENTS ON HEMODIALYSIS IN SELECTED HOSPITAL AT TRICHY** has been prepared by me under the guidance and direct supervision of **Prof. V.J. ELIZABETH M.Sc(N).,** Vice Principal, Thanthai Roever College of Nursing, Perambalur, as requirement for partial fulfillment of **M.Sc Nursing** degree course under **The Tamilnadu Dr. M.G.R. Medical University, Chennai .** This dissertation had not been previously formed and this will not be used in future for award of any other degree or diploma. This dissertation represents independent original work on the part of the candidate.

Place : Perambalur,
Date : April – 2016.

301411702,
II Year M.Sc (N) Student,
Thanthai Roever College of
Nursing, Perambalur**.**

# ACKNOWLEDGEMENT

**I am the Lord your God who leads you by the way you should go.**

**Isa 48:17**

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As a final note I, the investigator, owe a deep sense of gratitude to all those who have directly or indirectly contributed to the successful completion of this endeavour.

# THE EFFECT OF CRYOTHERAPY ON ARTERIOVENOUS FISTULA PUNCTURE PAIN AMONG PATIENTS ON HEMODIALYSIS IN SELECTED HOSPITAL AT TRICHY


## ABSTRACT

**INTRODUCTION:** Hemodialysis impacts quality of life of patients with chronic kidney disease. Although Arteriovenous Fistula have the lowest complaints of apprehension and fear of painful needling. cutaneous stimulation referred to as peripheral technique , describes any form of stimulation of the skin with the goal of pain relief.

**OBJECTIVE:** To assess the effectiveness of cryotherapy on ArterioVenous Fistula puncture pain among patients on hemodialysis .

**METHOD:** True experimental posttest only control group design was adopted for this study. Sixty patients were recruited by simple random sampling method. Experimental group (n=30) received cryotherapy for 8 minutes in contralateral arm and Control group (n=30) no intervention. ArterioVenous Fistula puncture pain was assessed by numerical pain scale.

**RESULTS:** The findings revealed that the post test mean score ArterioVenous Fistula puncture pain was 2.63 ± 1.27 in the experimental group and 7.06±1.28 in the control group.The calculated 't' value 13.48 was significant at $p<0.001$.

**DISCUSSION:** The study concluded that the level of ArterioVenous Fistula puncture pain among patients on hemodialysis was reduced after receiving cryotherapy.

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# CHAPTER – I

# INTRODUCTION

Chronic kidney disease is increasingly recognised as a global public health problem for both patients and their families in India because of their associated adverse clinical outcomes, poor quality of life and high health care cost.

World Health Organization estimates that the diseases of the kidney and urinary tract contribute to over 8.5 lakhs and over 15 million disability-adjusted life years. It is estimated that approximately one lakh new patients develop ESRD in India annually. The ESRD incidences has been reported to be 160 -232 per million population. The number is increasingly globally at a rate of 8% every year. It is estimated that only 10-20% of ESRD patient in India continue long term renal replacement therapy (RRT). Chronic Kidney Disease is 12th leading cause of death and 17th cause of disability in the world.

Chronic kidney disease patients mostly reporting to tertiary care centres in India are in the final stage where renal replacement therapy is the only option at the stage. Hemodialysis is the most frequently used renal replacement therapy. Arterio venous fistula remains a “GOLD STANDARD” for vascular access in Hemodialysis patients .

Hemodialysis can be done at a dialysis centre or at home . when done in a centre, It is generally done three times a week and takes between three and five hours per session . Home dialysis is generally done three to seven times per week and take three and ten hours per session.

Pain during arteriovenous fistula cannulation remains a common problem in hemodialysis patients. Pain inflicted by the insertion of large cannulae into the arterio- venous fistula is a significant cause of concern for both children and adults on regular hemodialysis. patients undergoing hemodialysis are repeatedly exposed to pain from approximately 300 punctures per year to their Arterio venous fistula. pain is an unpleasant sensory and emotional experience associated with physiological and psychological responses.

Although Arterio venous fistula puncturing causes pain, local anaesthesia is not frequently used due to concerns of vasoconstriction, burning sensation, scaring and infection. Alleviation of this pain might improve their acceptance of the procedure and thus , their quality of life.

The recommended hierarchy of pain management should consist of non-pharmacological treatment as first , then drugs and if necessary surgery. There are various non-pharmacological methods that can help to relieve the pain perception such as distraction, biofeed back, cryotherapy, hot application, touch therapy . These methods are superficial forms of treatment that the nurse in practice is qualified to perform. Nursing effort should be made to assess and manage acute pain inflicted by insertion of needle in Arterio venous fistula among hemodialysis patients.

Cryotherapy is greek word in which ‘cryo’ means ‘cold’ and ‘therapy’ means to ‘cure’. Cryotherapy is a treatment in which patients are exposed to extreme cold for short duration . cryotherapy which supplied over the intestine meridian relieve pain in the shoulder and arm, rigidity of neck, scapula and eye disease . This pathway is located on the back side of the hand between the thumb and the index finger , it is bilateral and begins in the surface of the skin runs to ends in large intestine. So procedural pain is one of

the primary types of pain which the health care team encounter in their daily practice.

## NEED FOR THE STUDY

According to WHO, world wide the number of receiving renal replacement therapy is estimated at more than 1.4 million with incidence growing by approximately 8% annually. In India there are 700 dialysis centers with a total of 4000 dialysis machine are available . The cost of each hemodialysis session in India varies from Rs.250 , in government hospital and Rs. 2000 in some private hospitals.

Arterio venous fistula have a much better access patency and survival than do venous catheters or graft. In CKD, 90.6% population had an AV fistula and 9.4% had an AV graft. During hemodialysis patient may experience some of the related complaints are puncturing pain, muscle cramps, itching , sleep problem, infection. The needles used are 14 to 16 gauges and are inserted into the fistula or graft to obtain vascular access. The insertion of large bore needle in to Arterio venous fistula causes significant pain.

**Figueiredo A E, et al** Conducted research into pain perception with arteriovenous fistula cannulation in patients with end stage renal failure (ESRF) undergoing haemodialysis. Patient's perceptions were measured in three different HD sessions. Pain was considered moderate to severe during AVF needling than that of buttonhole technique.

**Crespo Montero R,et al** evaluate the effect of needle bevel position on the degree of pain and damage to the skin covering the vein, in an ArterioVenous Fistula puncture. It was concluded that Arterio Venous fistula

puncture with the bevel facing downward significantly reduces the degree of pain and the skin lesion at the point of puncture, without increasing the number of punctures.

The renal patients experience pain during ArterioVenous Fistula which extends throughout renal replacement therapy (RRT) it, so the investigator choose non pharmacological cutaneous stimulation against ArterioVenous fistula puncture pain.

An experimental study was conducted on the effect of cutaneous stimulation on Arterio venous fistula puncture pain of hemodialysis patients. Randomly 45 patients were selected and intervention of cryotherapy was given for10 minutes. This results showed that the subjective pain scores of Arterio venous fistula puncture pain in experimental group with cutaneous stimulation were lower compared to the control group.

Nurses as advocator for patients are obligated to minimize the emotional and physical effects of painful procedures. The investigator felt that nurses in these departments can make major contribution to the patients by reducing pain in the fistula site most effective proven interventions.Hence the researcher is interested in evaluating the simple , cost effect, easy to administer intervention cryotherapy to reduce ArterioVenous Fistula puncture pain .

## STATEMENT OF THE PROBLEM

**A Study to assess the effectiveness of Cryotherapy on Arterio Venous Fistula puncture pain among patients on hemodialysis in selected hospital, at Trichy.**

## OBJECTIVES

1. To assess the level of ArterioVenous Fistula puncture pain among patients on hemodialysis.
2. To assess the effectiveness of cryotherapy on reduction of ArterioVenous Fistula puncture pain among patients on hemodialysis .
3. To find the association between post test level of ArterioVenous Fistula puncture pain among patients on hemodialysis and their selected demographic variables.

## HYPOTHESES

H1:There will be a significant reduction on ArterioVenous Fistula puncture pain among patients on hemodialysis who receive cryotherapy .

H2: There will be a significant association between the post test level of ArterioVenous Fistula puncture pain and their selected demographic variables of patients on hemodialysis who receive cryotherapy .

## OPERATIONAL DEFINITIONS

### Effectiveness

It refers to the outcome of cryotherapy in terms of reduction of Arterio Venous Fistula puncture pain.

## Cryotherapy

A cryotherapy is a cold application done with ice cubes wrapped in a glove on the web between the thumb and index finger of the hand not having Arterio Venous Fistula (contralateral arm) started 6 minutes before the puncturing procedure and continued 2 minutes after puncture .

## Arterio Venous Fistula

An Arterio Venous Fistula is the surgically created connection of a vein and artery usually in the forearm or upper arm ,to create an access to the vascular system for hemodialysis as a treatment of chronic renal failure .

## Hemodialysis

Refers to removal of waste product from the blood of a patient with acute or chronic renal failure by means of a dialyser machine.

## Arterio Venous Fistula Puncture Pain

ArterioVenous Fistula puncture pain is an expressed unpleasant subjective sensory and emotional experience of the patients associated with arteriovenous fistula puncture which is measured by standard numerical pain scale.

## ASSUMPTIONS

1. Patients on hemodialysis experience pain during arteriovenous fistula puncture
2. Cryotherapy reduce Arteriovenous fistula puncture pain .

## DELIMITATIONS

1. The duration of the study is delimited to one month .
2. The study is limited to only 60 participants .
3. The study is delimited to selected one setting .

## PROJECTED OUTCOME

The findings of this study will reveal the effectiveness of cryotherapy in reducing the ArterioVenous Fistula puncture pain among patients on hemodialysis. If found to be effective this intervention could be incorporated as one of the nursing measures to reduce the Arterio Venous Fistula pain among patients on hemodialysis.

# CHAPTER II

# REVIEW OF LITERATURE

A review of literature on the topic makes the researcher familiar with the existing studies and provides information that helps to focus on a particular problem and lay down the foundation for new knowledge. It aids in relating the outcomes of the study to the findings of other investigation .

Review of literature is defined as a critical summary of research on a topic of interest , often prepared to put a research problem in contest. (Polit and Beck ,2006).

The current study and review of various associated literature and review study, topics can be divide as follows ;

## PART I

**Section A: Studies related to cryotherapy on pain**
**Section B: Studies related to effectiveness of cryotherapy on ArterioVenous Fistula puncture Pain**

### Section A :Studies related to cryotherapy on pain

**Van Leeumen MC, et al. (2015)** reported that the Intralesional Cryotherapy for treatment of keloid scars showed favourable results interm of reduction of volume and complaints of pain and pruritus through a the prospective multicenter study with a 1 year follow up included 27 patients

with 29 keloid scars among Caucasian patient population. Intralesional cryotherapy was effective treatment of keloid scars P<0.001.

**LuYY, SuML,et al. (2015)** conducted a experimental study on the efficacy of cold-gel packing for relieving episiotomy pain among post partum women who had normal spontaneous deliveries, Northen Taiwan. Using randomized control trial ,sample size was 70.In the experimental group received at least six times of cold gel packing applied to the perineal wound . The result showed that women in the experimental group reported significantly lower pain intensity score, pain interference on daily activities.

**De souza Bosco paivac, et al. (2015)** evaluated the outcome of length of perineal pain relief after ice pack application .A quasi experimental study using a pretest and posttest design, was undertaken among 50 multiparous women. There was a significant reduction in the severity of perineal pain reported 5.4 vs 1.0 at p< 0.005 .The research concluded that the ice pack application is effective for alleviating postpartum perineal pain .

**Selva sathya, et al. (2015)** assessed the effect of ice pack application in reduction of pain and prevention of hematoma and bruise formations among patients receiving LMWH at PSG hospital Coimbatore. Using post test only control group design 44 samples were selected by purposive sampling technique. 10minutes ice pack application in the injection site .There was a significant reduction in the experimental group P = <0.05.

**Watkins AA , et al. (2014)** assessed the effectiveness of ice packs to reduce postoperative midline incision pain against treatment . 55 patients of major abdominal operations with midline incision were selected by randomized controlled trial, there was a significant reduction of the experimental group after cryotherapy (p<0.005) . The researcher concluded

that ice packs are a cost effective adjuvant for decreasing postoperative pain of patient undergoing major abdominal surgery.

**Radhika .p.v (2012**) conducted a study on effectiveness of cryotherapy to post operative pain management on patients undergoing orthopaedic surgery. 60 Samples were collected by simple random technique. The intervention given for 20 minutes thrice a day for 3 consecutive post operative days for experimental group . The result of the study shows that is effective in reduction of post operative pain .

**Fang L, et al.(2012)** examined the effect of cryotherapy in reducing the severity of wound pain after arthroscopy through the prospective, doubled blinded, quasi experimental study with two groups . Results showed that pain score decreased to 1.82 in experimental group than that of in control group 4.04 at p=0.005.

**Yava, et al.(2011)** evaluated the effectiveness of local cold application on skin burns and pain after transthoracic cardioversion. The aim of this study was to find the effectiveness of cold application on reducing the incidence, severity, pain or sensitivity of skin burns. The sample size was 48. Local cold application was given for 1hour for experimental group. Results showed that the incidence of burns was lowered to 12.3% in the experimental group than that of in control group 83.3%, P<0.001.

**EmineKol (2010)** evaluated the Outcomes of Ice Application for the Control of Pain Associated with Chest Tube Irritation. The randomized and single-blind study consisted of 40 patients who underwent thoracotomy with chest tube placement. Additionally, ice pack was applied to the chest tube insertion site at the 24th, 28th, 36th, and 40th postoperative hours for 20

minutes.The application of ice to the chest tube insertion site reduced pain associated with irritation along with the need for analgesics.

**Aisay,et al. (2005)** evaluated the efficacy of oral cryotherapy to prevent high dose melphalan induced stomatitis . 18 consecutive recipients of allogenic hematopoietic stem cell transplant were selected and it was significant( 85.7% = p.001). The study results showed that oral cryotherapy could effectively prevent stomatitis caused by high melphalan.

## Section B : Studies related to effectiveness of cryotherapy on ArterioVenous Fistula puncture Pain

**Vipinpatidar (2015)** assessed the effectiveness of cryotherapy on pain during arteriovenous fistula puncture among hemodialysis patients , in selected hospitals of pune. A quantitative pre experimental research design was used . 60 samples were selected by non - probability purposive sampling and concluded that the cryotherapy is an effective tool in reducing level of pain during arteriovenous fistula pain .

**Alwin Issac and Praveen Namboothri (2015)** assessed the effect of cryotherapy during ArterioVenous Fistula puncture- related pain among hemodialysis patients in SGPGIMS hospital of lucknow. A convenience sample of 30 patients were selected . They found that the objective and subjective pain scores were significantly reduced (p=0.001).They concluded the need for adopting alternative therapies such as cryotherapy for effective pain management in hospital settings.

**Josel Lijya** and **Lobo Diana (2015)** found the effect of cryotherapy on ArterioVenous Fistula puncture related pain among patients on hemodialysis at Mangalore. 50 samples were selected by purposive

sampling technique and application of cryotherapy in contralateral arm for 10 minutes as the intervention. The findings of the study concluded that cryotherapy was effective in reducing subjective pain and objective behavioural responses scores of arteriovenous puncture related pain.

**ManalE.Fareed, et al.(2014)** examined the effect of cutaneous stimulation :its effect on pain relieving among hemodialysis patients at Egypt. A quasi experimental ,52 patients were randomly selected and cryotherapy was given in the contralateral arm for 10 minutes . The study found that cutaneous stimulation is effective in reducing arteriovenous fistula puncture objective and subjective pain scores among hemodialysis patients .

**Shali G.S (2012)** conducted a study on outcome of cryotherapy on arteriovenous fistula puncture site pain among patient on hemodialysis in vijaya health care centre .A experimental design was used a randomized control trial on 60 patient undergoing hemodialysis with arteriovenous was done. It found to be significant (P=0.001) in reducing the arteriovenous fistula puncture site pain .This study highlights the need for adopting alternative therapies such as cryotherapy for effective pain management .

**Asmaa MahfouzHussan,et al.(2012)** found the impact of cryotherapy on pain intensity at puncture sites of ArterioVenous fistula among children undergoing hemodialysis. A quasi experimental design with 40 children was conducted for 6 months from two hemodialysis unit of Cairo university . The subjective pain was significantly reduced (P=0.05). They concluded that cryotherapy is effective in reducing subjective pain scores.

**SabithaP.B,et al. (2008)** assessed the effectiveness of cryotherapy on Arterio Venous fistula puncture pain in hemodialysis patients. 60 patients by using randomized control trial objective and subjective pain scoring was

done for two consecutive days with cryotherapy for the experimental and without cryotherapy for control group . It was found significant reduction (P = 0.001) and concluded that cryotherapy is effective in reducing ArterioVenous fistula puncture pain of hemodialysis patients .

**Ali FakhrMovahedi, et al. (2006)** determined the effect of local refrigeration prior to venipuncture on pain related responses in school age children a Quasi – experimental study . The samples were 80 children selected by purposive sampling , the injection site was refrigerated for three minutes using an ice bag in the experimental group . The results showed use of local refrigeration prior to venipuncture can be considered an easy and effective intervention of reducing venipuncture –related pain .

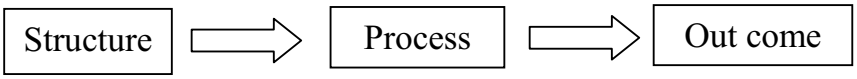
**JS Park, et al.** identified the effect of cutaneous stimulation on reduction of arteriovenous fistula puncture pain on 45 haemodialysis patients. The results showed that the subjective pain scores of AV fistula puncture pain in experimental group with cutaneous stimulation were lower compared to the control group.

The reviewed literatures showed the promising effect of cryotherapy on ArterioVenous Fistula puncture pain and this study proposes to evaluate the effect of cryotherapy on reduction of ArterioVenous Fistula puncture pain.

# PART II

# CONCEPTUAL FRAMEWORK

Conceptual framework for this study is developed by the investigator based on modified Donabedian's model. The focus of this theory is the adaptation of the individual to stimuli, from the environment from within. Each component has a direct influence on the next, as represented by the arrows in the following schematic (Donabedian, 1980):




## Structure

Structure includes all the factors that affect the context in which care is delivered. This includes the physical facility, equipment, and human resources, as well as organizational characteristics .These factors control how providers and patients in a healthcare system act and are measures of the average quality of care within a facility or system. Structure is often easy to observe and measure and it may be the upstream cause of problems identified in process.

In this study, the structure includes the human resource demographic Variables.

## Process

Process is the sum of all actions that make up healthcare. These commonly include diagnosis, treatment, preventive care, and patients

education but may be expanded to include actions taken by the patients or their families. Processes can be further classified as technical processes, how care is delivered, or interpersonal processes, which all encompass the manner in which care is delivered.

Process includes intervention or application of cryotherapy among patients on hemodialysis with ArterioVenous Fistula . In the process, experimental group receives cryotherapy whereas control group didn't receive cryotherapy.

## Outcome

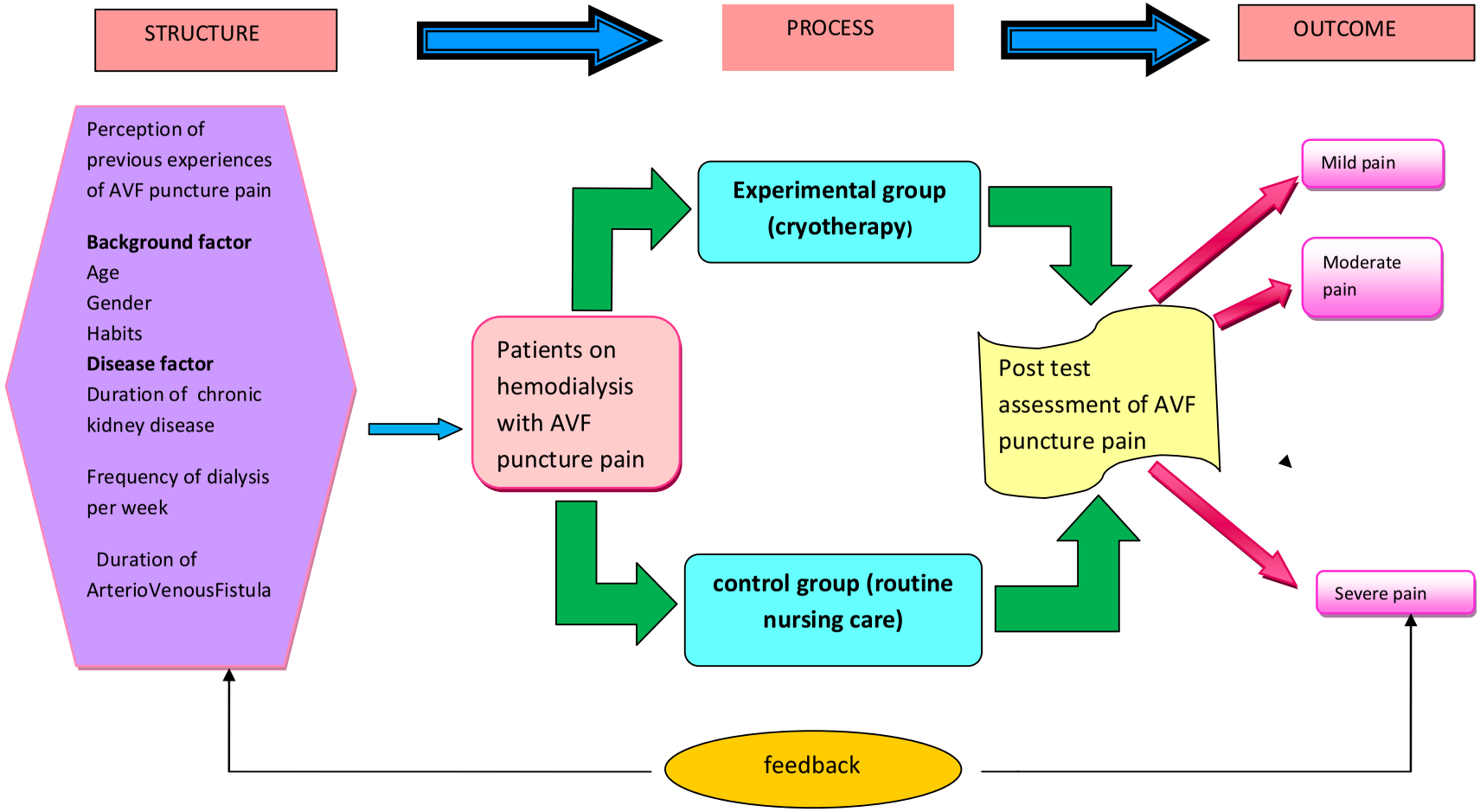
Outcome contains all the effects of healthcare on patients or populations, including changes to health status, behavior, or knowledge as well as patients satisfaction and health-related quality of life. Outcomes are sometimes seen as the most important indicators of quality because improving patients health status is the primary goal of healthcare. However, accurately measuring outcomes that can be attributed exclusively to healthcare is very difficult.

The outcome of the study is post test assessment of ArterioVenous Fistula puncture pain . It was done in both experimental group and control group by using numerical pain scale.

## FEED BACK

The feed back is refers to the environment response of the system . Feedback may be neutral positive or negative . If the feedback is negative the process is again reassessed.

**Fig.1 CONCEPTUAL FRAMEWORK BASED ON MODIFIED DONABEDIAN'S MODEL (1980)**



# CHAPTER –III

# RESEARCH METHODOLOGY

This chapter describes the methodology followed to assess the effectiveness of cryotherapy on arteriovenous fistula puncture pain among patients on hemodialysis .

## RESEARCH APPROACH

An evaluative approach

## RESEARCH DESIGN

True Experimental – post test only control group design

| GROUP | INTERVENTION | POST TEST |
|---|---|---|
| Experimental group | X | 01 |
| Control group | - | 01 |

X - cryotherapy

01 - post test

## VARIABLES

Independent variable - cryotherapy

Dependent variable - ArterioVenous Fistula puncture pain

## SETTING OF THE STUDY

Dialysis unit of Gastro Care Hospital, Trichy.

## POPULATION

Patients with chronic kidney disease undergoing hemodialysis with ArterioVenous Fistula .

## SAMPLE

Patients with the age group of 21 -70 years who are undergoing hemodialysis with ArterioVenous Fistula at gastro care hospital.

## SAMPLE SIZE

60 patients ; 30 in experimental &30 in control group

## SAMPLING TECHNIQUE

Simple random sampling technique (lottery method).

## CRITERIA FOR SAMPLE SELECTION

## INCLUSION CRITERIA

1. Patients who receive hemodialysis with ArteioVenous fistula in forearm.
2. Patients who are willing to participate in the study.
3. Patients between the age group of 21-70 .
4. Patients who are conscious .

## EXCLUSION CRITERIA:

1. Patients who were not oriented & conscious .
2. Patients having wound or lesion in the web between the thumb and the index finger of the contra lateral arm .
3. Patients having paralysis , diabetic neuropathy.
4. Patients who are not willing to participate in the study .

## DESCRIPTION OF THE INSTRUMENT

## SECTION 1

Questionnaire : Comprises of questions to elicit demographic data .

## SECTION 2

Numerical pain scale .

## GRADING PROCEDURE

| **Score** | | **Level of pain** |
|---|---|---|
| 0 | - | No pain |
| 1 to 3 | - | Mild pain |
| 4 to 6 | - | Moderate pain |
| 7 to 10 | - | Severe pain |

## CONTENT VALIDITY

The content validity of the tool was established on the opinion of five experts in the field of nursing . Numerical pain scale was finalized for this study .

## PILOT STUDY

The pilot study was done at Gastro Care Hospital Trichy between 6.07.2015 to 12.07.2015 to test the feasibility , relevance and practicability . Permission was sought from the Managing Director , Gastro Care Hospital Trichy . The objectives of the study were explained to the Managing Director and the Nursing superintendent. The informed written consent was obtained from all the samples after explaining the purpose of the study . The pilot study was conducted among 6 patients , 3 on each group ,they selected by simple random sampling technique . on the 1st day demographic data collected and intervention cryotherapy was given to the experimental group for 8 minutes in the contralateral arm. At the end of intervention post test level of ArterioVenous Fistula puncture pain was assessed to both groups . Based on the study findings it was decided to conduct the main study without any modification.

## DATA COLLECION PROCEDURE

Data collection was done from 1.10.2015 to 27.10.2015 at Gastro Care Hospital Trichy . 60 patients were selected by simple random sampling technique . Data was collected all the days expect Sunday. Informed consent obtained and demographic data collected, no pre test obtained . Intervention cryotherapy was given for 8 minutes to the experimental group and post test was done for both experimental group and control group patients. The researcher herself collected the data by using standard numerical pain scale .

## PLAN FOR DATA ANALYSIS

It was planned to analyze the data using descriptive and inferential statistics.

## DESCRIPTIVE STATISTICS

1. The frequency and percentage distribution will be used to describe the demographic variables and level of ArterioVenous Fistula puncture pain among patients on hemodialysis.
2. Mean and standard deviation will be used to assess the post-test pain score.

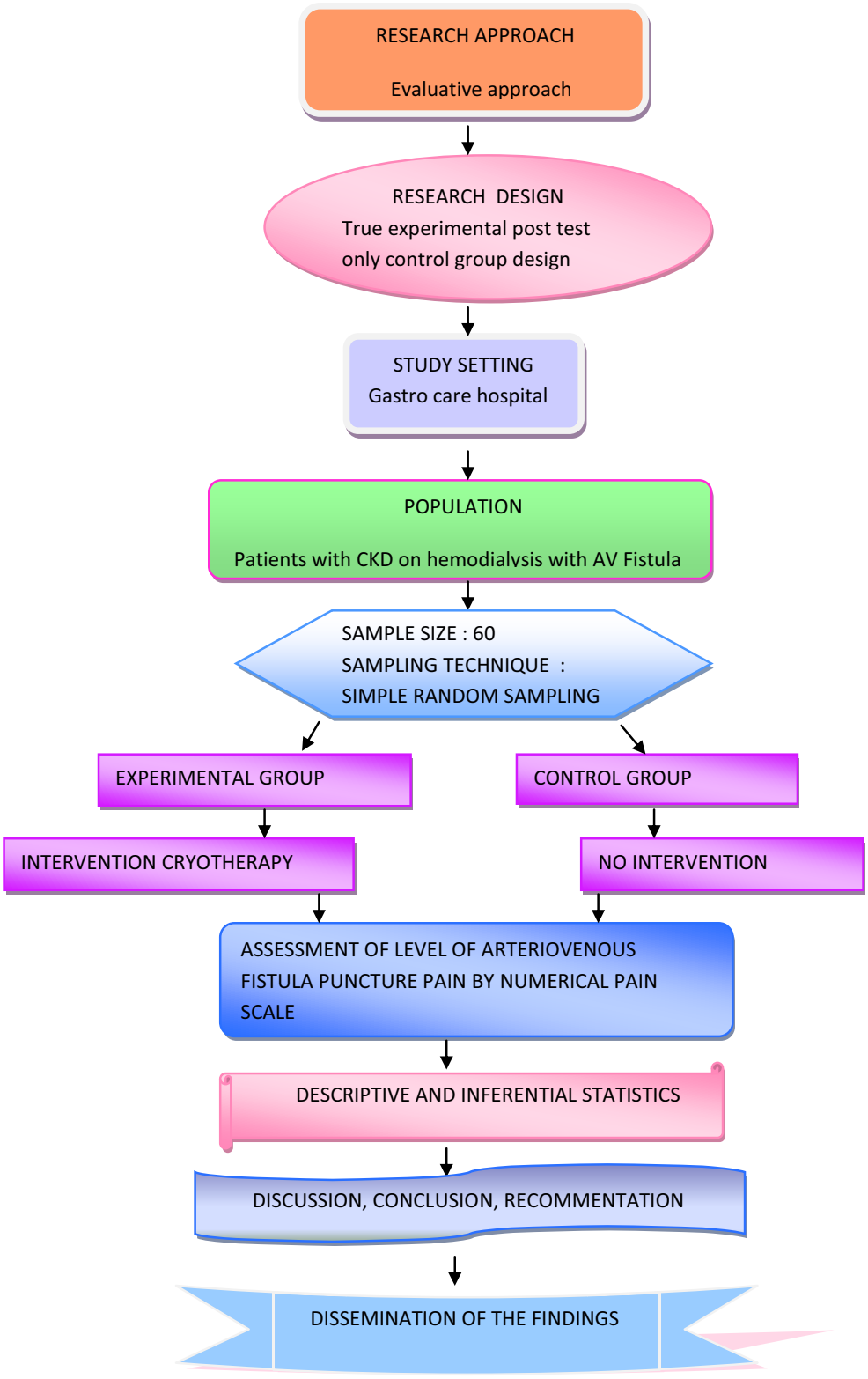
## INFERENTIAL STATISTICS

1. Independent 't'-test will be used to compare the post test level of ArterioVenous Fistula puncture pain.
2. Chi – square test will be used to find the association of post – test level of ArterioVenous Fistula Puncture pain and their selected demographic variables.

## ETHICAL CONSIDERATIONS

1. The study was performed after getting approval from the ethical committee, Thanthai Roever College Of Nursing , Perambalur .
2. Permission was obtained from the Managing director of Gastro Care Hospital ,Trichy .
3. Informed written Consent was obtained from each participants before collecting data .
4. Confidentiality was maintained throughout the study.

**Figure 2: SCHEMATIC RESPRESENTATION OF RESEARCH METHODOLOGY**



# CHAPTER – IV

# DATA ANALYSIS AND INTERPRETATION

This chapter deals with the analysis and interpretation of data collected from 60 patients on hemodialysis, to assess the effectiveness of Cryotherapy on ArterioVenous Fistula puncture pain among patients on hemodialysis. The data collected for the study were grouped and analyzed as per the objectives set for the study. The findings based on the descriptive and inferential statistical analysis are presented under the following sections.

## ORGANIZATION OF DATA

The findings of the study were grouped and analyzed under the following sections.

**Section A :** Description of the demographic variables of patients on hemodialysis.

**Section B :** Post test level of ArterioVenous Fistula puncture pain among patients on hemodialysis in experimental and control group.

**Section C :** Effectiveness of Cryotherapy on ArterioVenous Fistula puncture pain among patients on hemodialysis in experimental and control group.

**Section D :** Association of post test level of ArterioVenous Fistula puncture pain and their selected demographic variables in experimental and control group.

## SECTION A

**Table 1: Frequency and percentage distribution of demographic variables of patients on hemodialysis.**

**N = 60(30+30)**

| Demographic Variables | Experimental Group | | Control Group | |
|---|---|---|---|---|
| | No. | % | No. | % |
| **Age in years** | | | | |
| 21 – 30 | 1 | 3.33 | 1 | 3.33 |
| 31 – 40 | 5 | 16.67 | 4 | 13.33 |
| 41 – 50 | 3 | 10.00 | 7 | 23.33 |
| 51 – 60 | 11 | 36.67 | 6 | 20.00 |
| 61 – 70 | 10 | 33.33 | 12 | 40.00 |
| **Gender** | | | | |
| Male | 19 | 63.33 | 22 | 73.33 |
| Female | 11 | 36.67 | 8 | 26.67 |
| **Bad Habits** | | | | |
| Smoking | 3 | 10.00 | 6 | 20.00 |
| Alcohol | 8 | 26.67 | 6 | 20.00 |
| Tobacco | 4 | 13.33 | 5 | 16.67 |
| None | 15 | 50.00 | 13 | 43.33 |
| **Duration of chronic kidney disease** | | | | |
| <1year | 16 | 53.33 | 13 | 43.33 |
| 1 - 3 years | 10 | 33.33 | 11 | 36.67 |
| >3 years | 4 | 13.33 | 6 | 20.00 |
| **Frequency of dialysis per week** | | | | |
| Once | 3 | 10.00 | 0 | 0.00 |
| Twice | 15 | 50.00 | 18 | 60.00 |
| Thrice | 12 | 40.00 | 12 | 40.00 |

| Demographic Variables | Experimental Group | | Control Group | |
|---|---|---|---|---|
| | No. | % | No. | % |
| **Duration of arteriovenous fistula** | | | | |
| <6 months | 9 | 30.00 | 10 | 33.33 |
| 6 months - 1 year | 13 | 43.33 | 12 | 40.00 |
| > 1 years | 8 | 26.67 | 8 | 26.67 |
| **Perception of previous experience of Arterio Venous fistula puncture pain** | | | | |
| No pain | 0 | 0.00 | 0 | 0.00 |
| Mild pain | 0 | 0.00 | 0 | 0.00 |
| Moderate pain | 10 | 33.33 | 13 | 43.33 |
| Severe pain | 20 | 66.67 | 17 | 56.67 |

The table 1 shows that in the experimental group, majority 11(36.67%) were in the age group of 51 – 60 yrs, 19(63.33%) were male, 15(50%) had no bad habits, 16(53.33%) were suffering from chronic kidney disease for <1 year, 15(50%) undergone dialysis twice per week, 13(43.33%) had arteriovenous fistula for 6 months – 1 year and 20(66.67%) had severe pain experience in previous perception.

Whereas in the control group, majority 12(40%) were in the age group of 61 – 70 yrs, 22(73.33%) were male, 13(43.33%) had no bad habits, 13(43.33%) were suffering from chronic kidney disease for <1 year, 18(60%) undergone dialysis twice per week, 12(40%) had arteriovenous fistula for 6 months – 1year and 17(56.67%) had severe pain experience in previous perception.

**Figure 3 Percentage distribution of age among patients on hemodialysis**

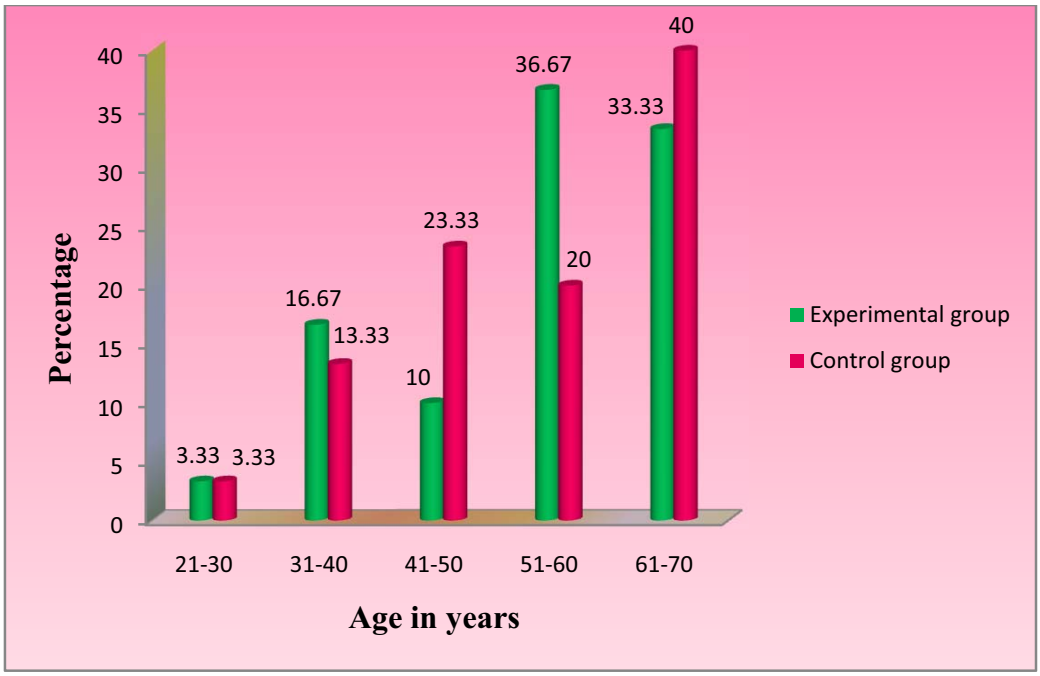



**Figure 4 Percentage distribution of gender among patients on hemodialysis**

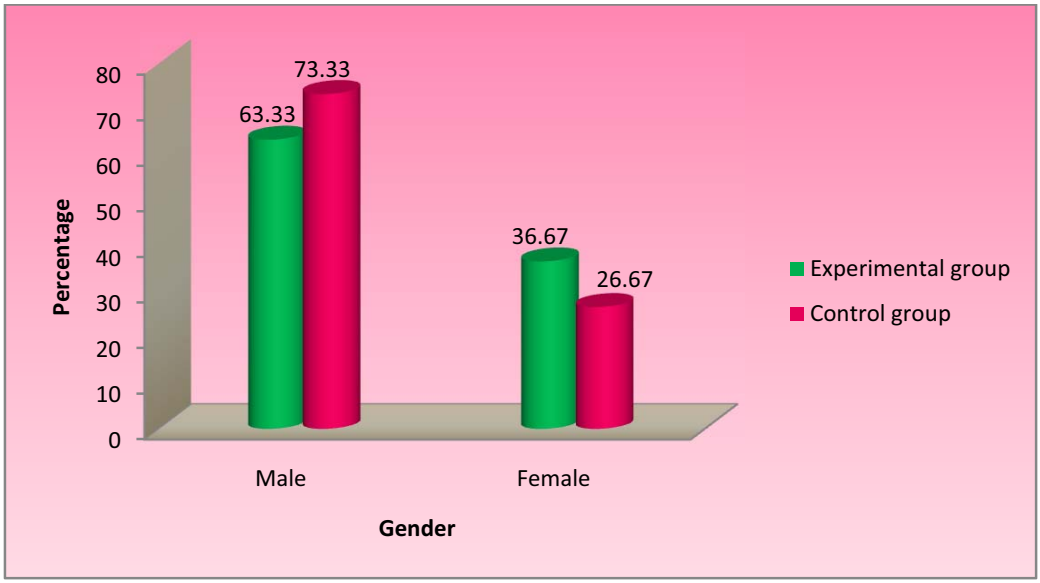


**Figure 5 Percentage distribution of duration of chronic kidney disease among patients on hemodialysis**

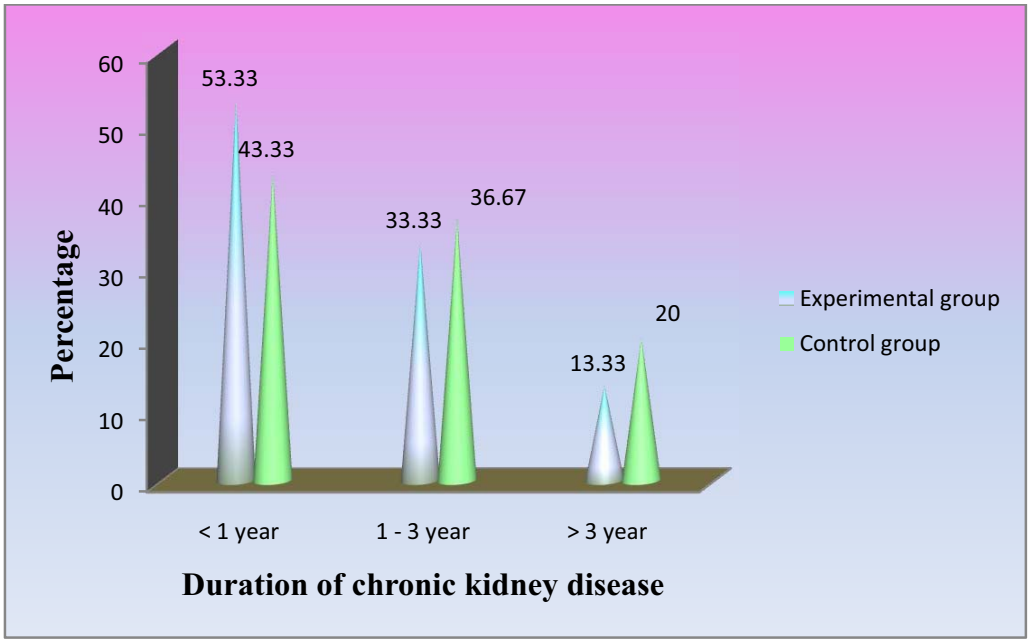



**Figure 6 Percentage distribution of frequency of dialysis per week among patients on hemodialysis**

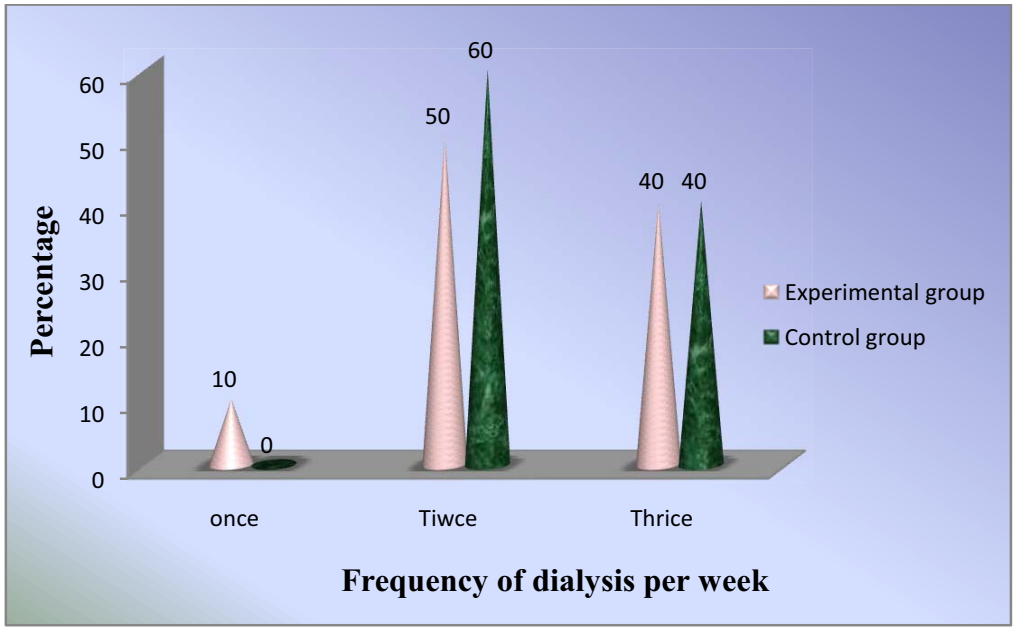
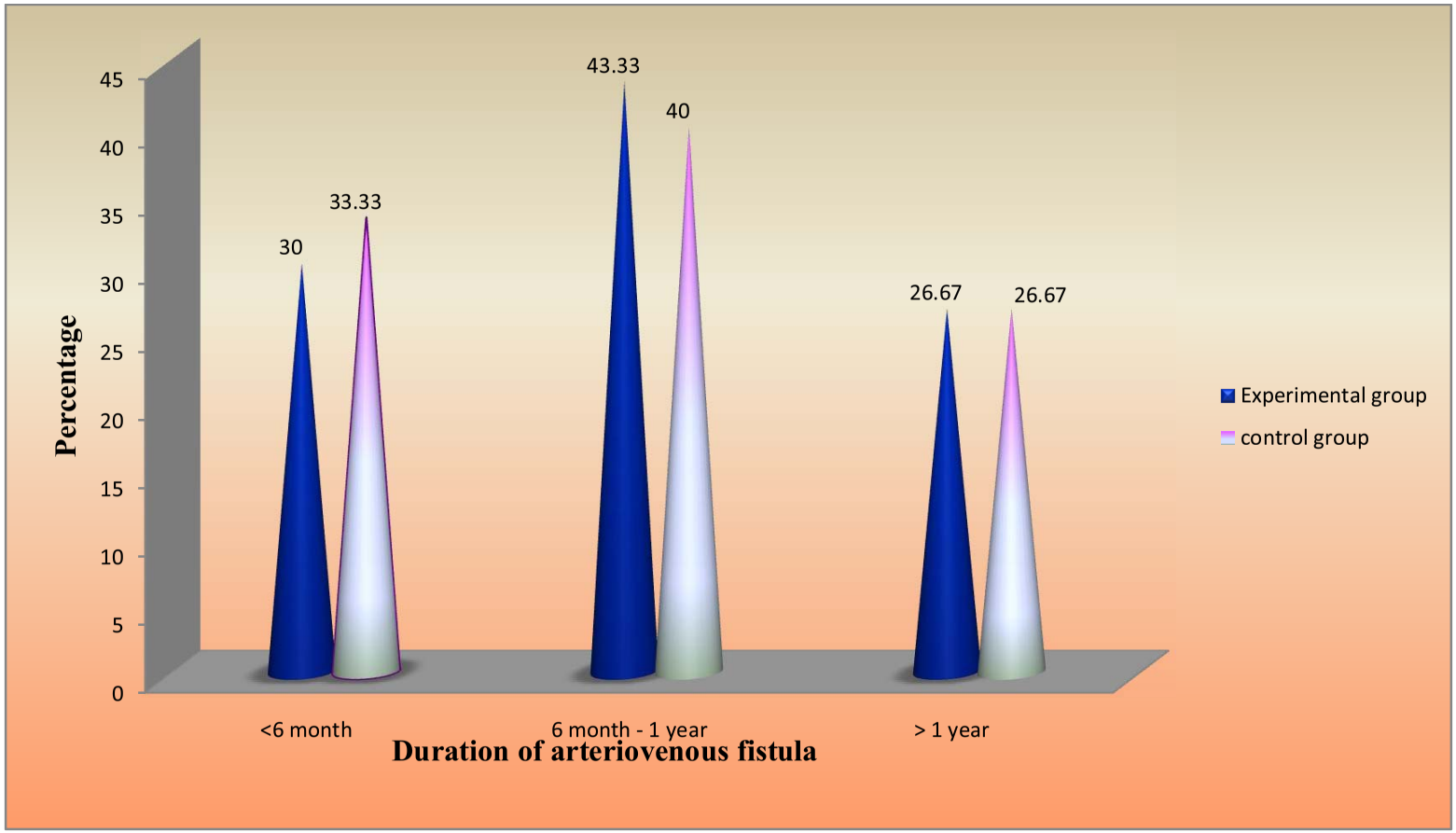


**Figure 7: Percentage distribution of duration of arteriovenous fistula among patients on hemodialysis**



## SECTION B

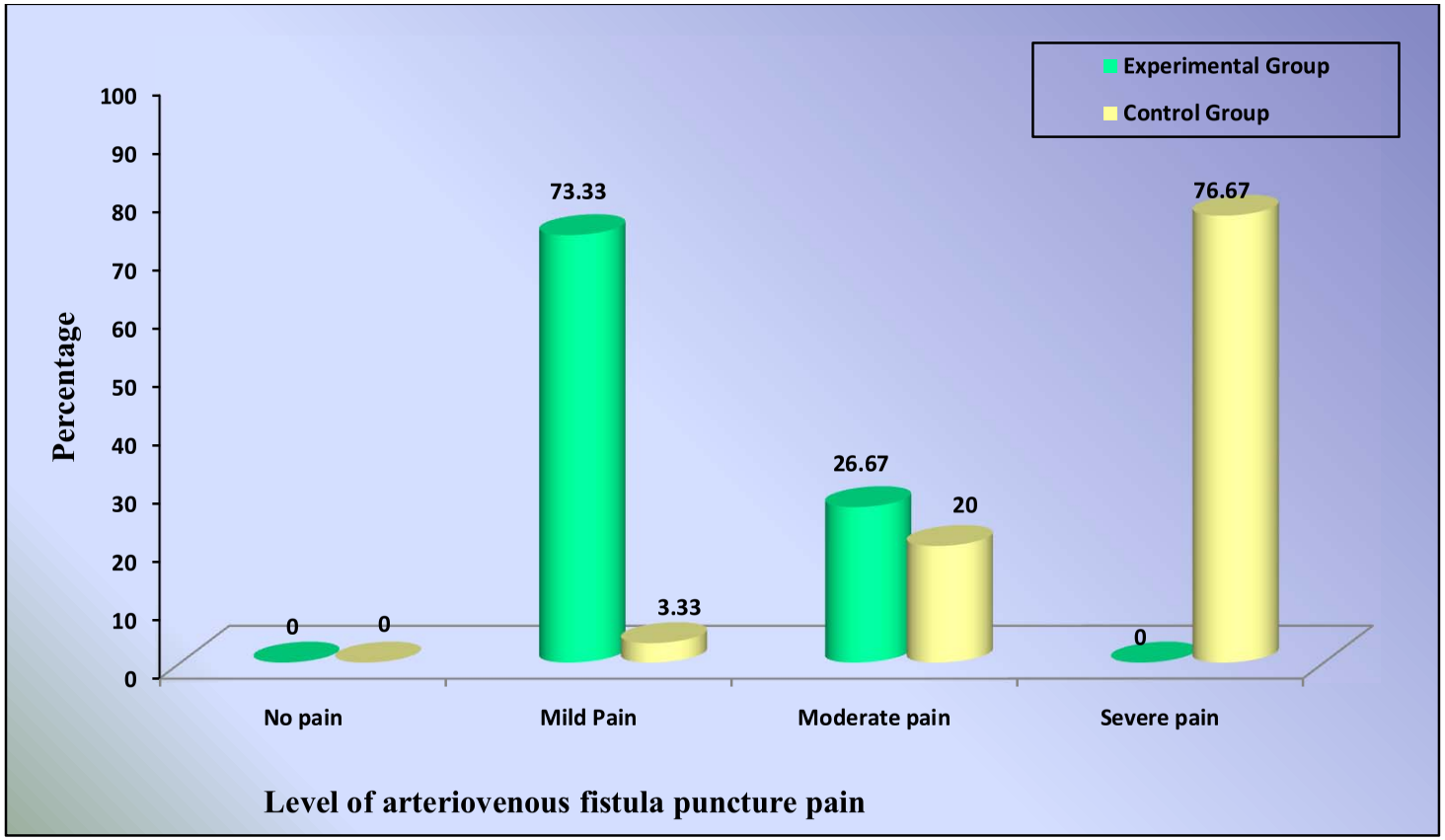
**Table 2: Frequency and Percentage distribution of post test level of ArterioVenous Fistula puncture pain among patients on hemodialysis in experimental and control group.**

**N = 60(30+30)**

| Level of Arteriovenous fistula puncture pain | Experimental group | | Control group | |
|---|---|---|---|---|
| | No. | % | No. | % |
| No pain | 0 | 0 | 0 | 0 |
| Mild pain | 22 | 73.33 | 1 | 3.33 |
| Moderate pain | 8 | 26.67 | 6 | 20.0 |
| Severe pain | 0 | 0 | 23 | 76.67 |

The table 2 shows that in the experimental group, majority 22(73.33%) had mild level and 8(26.67%) had moderate level of arteriovenous fistula puncture pain whereas in the control group, majority 23(76.67%) had severe level , 6(20%) had moderate level and 1(3.33%) had mild level of arteriovenous fistula puncture pain.

**Figure 8 Percentage distribution of post test level of Arterio Venous Fistula puncture pain among patients on hemodialysis in experimental and control group.**



## SECTION C

**Table 3: Comparison of post test mean score of ArterioVenous Fistula puncture pain among patients on hemodialysis between the experimental and control group.**

**N = 60(30+30)**

| Group | Total Score | Mean | Standard deviation | Mean difference | 't' Value |
|---|---|---|---|---|---|
| Experimental Group | 10 | 2.63 | 1.27 | 4.43 | t = 13.428 p = 0.000, S*** |
| Control Group | 10 | 7.06 | 1.28 | | |

***p<0.001, S – Significant

The table 3 shows that in the experimental group, the post test mean score of arteriovenous fistula puncture pain was 2.63 ± 1.27 and the post test mean score of arteriovenous fistula puncture pain in the control group was 7.06±1.28. The calculated 't' value of t = 13.428 was found to be statistically significant at p<0.001 level.

## SECTION D

**Table 5: Association of post test level of ArterioVenous Fistula puncture pain among patients on hemodialysis and their selected demographic variables in experimental group.**

**n = 30**

| Demographic Variables | Mild (1 – 3) | | Moderate (4 – 6) | | Chi-Square Value |
|---|---|---|---|---|---|
| | No. | % | No. | % | |
| **Age in years** | | | | | |
| 21 – 30 | 1 | 3.3 | 0 | 0 | $\chi^2$=5.315 d.f=4 p=0.256 N.S |
| 31 – 40 | 3 | 10.0 | 2 | 6.7 | |
| 41 – 50 | 3 | 10.0 | 0 | 0 | |
| 51 – 60 | 6 | 20.0 | 5 | 16.7 | |
| 61 – 70 | 9 | 30.0 | 1 | 3.3 | |
| **Gender** | | | | | $\chi^2$=0.003 d.f=1 p=0.954 N.S |
| Male | 14 | 46.7 | 5 | 16.7 | |
| Female | 8 | 26.7 | 3 | 10.0 | |
| **Habits** | | | | | $\chi^2$=1.236 d.f=3 p=0.744 N.S |
| Smoking | 2 | 6.7 | 1 | 3.3 | |
| Alcohol | 7 | 23.3 | 1 | 3.3 | |
| Tobacco | 3 | 10.03 | 1 | 3.3 | |
| None | 10 | 33.3 | 5 | 16.7 | |
| **Duration of chronic kidney disease** | | | | | $\chi^2$=0.405 d.f=2 p=0.817 N.S |
| <1year | 11 | 36.7 | 5 | 16.7 | |
| 1 - 3 years | 8 | 26.7 | 2 | 6.7 | |
| >3 years | 3 | 10.0 | 1 | 3.3 | |

| Demographic Variables | Mild (1 – 3) | | Moderate (4 – 6) | | Chi-Square Value |
|---|---|---|---|---|---|
| | No. | % | No. | % | |
| **Frequency of dialysis per week** | | | | | $\chi^2$=2.813 d.f=2 p=0.245 N.S |
| Once | 3 | 10.0 | 0 | 0 | |
| Twice | 12 | 40.0 | 3 | 10.0 | |
| Thrice | 7 | 23.3 | 5 | 16.7 | |
| **Duration of Arteriovenous fistula** | | | | | $\chi^2$=0.214 d.f=2 p=0.898 N.S |
| <6 months | 7 | 23.3 | 2 | 6.7 | |
| 6 months -1 year | 9 | 30.0 | 4 | 13.3 | |
| >1 years | 6 | 20 | 2 | 6.7 | |
| **Perception of previous experience of Arteriovenous fistula puncture pain** | | | | | $\chi^2$=2.131 d.f=1 p=0.144 N.S |
| No pain | - | - | - | - | |
| Mild pain | - | - | - | - | |
| Moderate pain | 9 | 30.0 | 1 | 3.3 | |
| Severe pain | 13 | 43.3 | 7 | 23.3 | |

N.S – Not Significant

The table 5 shows that there was no statistically significant association of the demographic variables and level of arteriovenous fistula puncture pain among patients on hemodialysis in experimental group.

**Table 6: Association of post test level of ArterioVenous Fistula puncture pain among patients on hemodialysis and their selected demographic variables in the control group.**

**n = 30**

| Demographic Variables | Mild (1 – 3) | | Moderate (4 – 6) | | Severe (7 – 10) | | Chi-Square Value |
|---|---|---|---|---|---|---|---|
| | No | % | No | % | No | % | |
| **Age in years** | | | | | | | |
| 21 – 30 | 0 | 0 | 0 | 0 | 1 | 3.3 | $\chi^2$=7.464 |
| 31 – 40 | 0 | 0 | 1 | 3.3 | 3 | 10.0 | d.f=8 |
| 41 – 50 | 0 | 0 | 0 | 0 | 7 | 23.3 | p=0.488 |
| 51 – 60 | 1 | 3.3 | 2 | 6.7 | 3 | 10.0 | N.S |
| 61 – 70 | 0 | 0 | 3 | 10.0 | 9 | 30.0 | |
| **Gender** | | | | | | | $\chi^2$=3.061 |
| Male | 0 | 0 | 5 | 16.7 | 17 | 56.7 | d.f=2 |
| Female | 1 | 3.3 | 1 | 3.3 | 6 | 20.0 | p=0.216 |
| | | | | | | | N.S |
| **Habits** | | | | | | | $\chi^2$=4.025 |
| Smoking | 0 | 0 | 2 | 6.7 | 4 | 13.3 | d.f=6 |
| Alcohol | 0 | 0 | 2 | 6.7 | 4 | 13.3 | p=0.673 |
| Tobacco | 0 | 0 | 0 | 0 | 5 | 16.7 | N.S |
| None | 1 | 3.3 | 2 | 6.7 | 10 | 33.3 | |
| **Duration of chronic kidney disease** | | | | | | | $\chi^2$=1.828 |
| <1year | 1 | 3.3 | 2 | 6.7 | 10 | 33.3 | d.f=4 |
| 1 - 3 years | 0 | 0 | 3 | 10.0 | 8 | 26.7 | p=0.767 |
| >3 years | 0 | 0 | 1 | 3.3 | 5 | 16.7 | N.S |

| Demographic Variables | Mild (1 – 3) | | Moderate (4 – 6) | | Severe (7 – 10) | | Chi-Square Value |
|---|---|---|---|---|---|---|---|
| | No | % | No | % | No | % | |
| **Frequency of dialysis per week** | | | | | | | $\chi^2$=0.894 |
| Once | - | - | - | - | - | - | d.f=2 |
| Twice | 1 | 3.3 | 4 | 13.3 | 13 | 43.3 | p=0.640 |
| Thrice | 0 | 0 | 2 | 6.7 | 10 | 33.3 | N.S |
| **Duration of Arteriovenous fistula** | | | | | | | $\chi^2$=5.821 |
| < 6 months | 1 | 3.3 | 0 | 0 | 9 | 30.0 | d.f=4 |
| 6 months -1 year | 0 | 0 | 3 | 10.0 | 9 | 30.0 | p=0.213 |
| > 1 years | 0 | 0 | 3 | 10.0 | 5 | 16.7 | N.S |
| **Perception of previous experience of Arteriovenous fistula puncture pain** | | | | | | | $\chi^2$=0.873 |
| No pain | - | - | - | - | - | - | d.f=2 |
| Mild pain | - | - | - | - | - | - | p=0.646 |
| Moderate pain | 0 | 0 | 3 | 10.0 | 10 | 33.3 | N.S |
| Severe pain | 1 | 3.3 | 3 | 10.0 | 13 | 43.3 | |

N.S – Not Significant

The table 6 shows that there was no statistically significant association of the demographic variables and level of arteriovenous fistula puncture pain among patients on hemodialysis in control group.

# CHAPTER – V

# DISCUSSION

This chapter high lights the discussion of the data analysed based on the objectives and hypotheses of the study . The problem stated is " A study to assess the effectiveness of cryotherapy on ArterioVenous Fistula puncture pain among patients on hemodialysis in gastro care hospital at trichy" . The discussion based on the objectives of the study and hypotheses specified in this study .

***The first objective of the study was to assess the level of ArterioVenous Fistula puncture pain among patients on hemodialysis.***

In the experimental group post test level of arteriovenous fistula puncture pain, the majority of the subjects 73.33% had mild pain and 26.67% had moderate pain where as in the control group post test of level of arteriovenous fistula puncture pain majority 76.6% had severe pain and 20% had moderate pain , 3.33% had mild pain.

***The second objective of the study was to assess the effectiveness of cryotherapy on reduction of Arterio Venous Fistula puncture pain among patients on hemodialysis .***

The calculated mean pain score was 2.63 ± 1.27 in the experimental group and the calculated mean pain score was 7.06 ± 1.28 in the control group. The mean difference was 4.43 and the calculated t value 13.428 was significant at $P<0.001$ .Hence the stated hypothesis H1: There will be a

significant reduction on Arterio Venous fistula puncture pain among patients on hemodialysis who receive cryotherapy is accepted.

The same significant findings was reported by Alwin Issac (2015) assessed effectiveness of cryotherapy on Arterio Venous Fistula puncture pain among hemodialysis patients. The objective and subjective Arterio Venous fistula puncture pain score were significantly reduced at p=0.001.

***The third objective of the study was to find the association between post test level of Arterio Venous Fistula puncture pain among patients on hemodialysis and their selected demographic variables.***

The association of the post lest level of arterio venous fistula puncture pain among patients on hemodialysis and their selected demographic variables findings revealed that there was no significant association found between the post test level of arteriovenous fistula puncture pain and age, gender, habits, duration of chronic kidney disease , frequency of dialysis per week , duration of arteriovenous fistula, perception of previous experiences of arteriovenous fistula puncture pain at P< 0.001 level .Hence the stated hypothesis H2 There will be a significant association between the post test level of arteriovenous fistula puncture pain and their selected demographic variables of patients on hemodialysis who receive cryotherapy is not accepted .

# CHAPTER-VI

# SUMMARY, CONCLUSION, IMPLICATIONS, AND RECOMMENDATIONS

This chapter is divided into two sections. In the **section I** deals with summary of the study, findings, and conclusion. In the **Section II** deals with implications in various areas of nursing practice, nursing education, nursing administration, and nursing research, and recommendations for further study.

## SUMMARY OF THE STUDY

The main objective of the study was to assess the effectiveness of cryotherapy on ArterioVenous fistula puncture pain among patients on hemodialysis in Gastro Care Hospital Trichy . An evaluative approach , True experimental design - posttest only control group design was adopted for this study . Simple random sampling technique was used to select the sample and the sample size was 60. Conceptual framework modified Donabedian's model was used for this study.

The tool selected for the present study included interview questions for demographic data and numerical pain scale to assess the level of artertiovenous fisutla puncture pain among patient on hemodialysis.

The data collection was done for a period of four weeks. Cryotherapy in experimental group, for the control group in routine management. Then the post test assessment done through Numerical pain scale both experimental and control group. Both inferential and descriptive statistics were used to

analysis the data, interpreted in terms of objectives and hypotheses of the study.

The study findings shows that the Cryotherapy is effective on reducing arteriovenous fistula puncture pain among patients on hemodialysis.

## MAJOR FINDINGS OF THE STUDY

### Majority of the Participants

1. 36.67 % were in the age group of 51 – 60 years in experimental group, and 40% were in the age group of 41-50 and 61-70 years in control group.
2. 63.33% were male in experimental group, and 73.33% were male in control group.
3. 50% were none of bad habits in experimental group, and 43.33% were none of bad habits in control group.
4. 53.33% had suffering from chronic kidney disease for <1year in experimental group, and 43.33% had suffering from chronic kidney disease for <1year in control group.
5. 50% were undergoing hemodialysis for twice a week in experimental group, and 60% were undergoing hemodialysis for twice a week in control group.
6. 43.33% had arteriovenous fistula for 1 year in experimental group, and 40% had arteriovenous fistula for 1 year in control group.
7. 66.67% had perception of previous experiences of severe pain in experimental group, and 56.67%had perception of previous experiences of severe pain in control group.

**II Findings related to effectiveness of cryotherapy on Arteriovenous Fistula puncture pain among patients on hemodialysis**

In experimental group, the post test mean score of arteriovenous fistula puncture pain was 2.63±1.27 and the post test mean score of arteriovenous fistula puncture pain in the control group was 7.06±1.28. The calculated 't' value of t = 13.428 was found to be statistically significant at $p<0.001$ level.

**III Findings related to association between post test level of Arteriovenous Fistula puncture pain and their selected demographic variables of both groups.**

Data findings revealed that there was no statistically significant association between post test level of arterio venous fistula puncture pain among patients on hemodialysis and their selected demographic variables of both groups

## IMPLICATIONS OF THE STUDY

The findings of the study have implication in various areas of nursing practice, nursing education, nursing administration, and nursing research and recommendations for further study are present.

### Implications for nursing practice

1. Nurses have a vital role in caring patients who undergo hemodialysis. By giving arterio venous fistula puncture pain as a routine care will reduce the pain .

2. Develop sensitivity to the effects of cryotherapy on reduction of pain among clients undergoing hemodialysis.
3. Encourage the use of cryotherapy intervention in reduction of AV fistula puncture pain and to minimize the requirement of pharmacological management.

## Implication for nursing education

1. As nursing educator, we must strengthen the evidence based nursing practices among the undergraduate and postgraduate nursing students.
2. Provide adequate clinical exposure to students , where cryotherapy is used in reducing of AV fistula puncture related pain.
3. Educate the students about various complementary and alternative therapies for reduction of pain.

### Implications for nursing administration

1. Patient and family awareness and training sessions can be conducted.
2. Nurse administrator should take the major role of cryotherapy on arteriovenous fistula puncture pain among patients on hemodialysis
3. The nursing administrator should supervise the intervention done for the patients by nurses and also monitor the standards of practice to promote excellence in nursing care.

## Implications for nursing research

1. Nursing researcher should encourage clinical nurses to apply the research findings in their daily nursing care activities and can bring out

new innovative procedures to reduce the arteriovenous fistula puncture pain.

2. Encourage the non- pharmacological interventions. Nurse researcher can promote many studies on this topic.
3. The researcher should conduct periodic review of research findings and disseminate the findings through conferences, seminars, publications in journals, and in the World Wide Web.

## LIMITATIONS

1. Sample size only 60
2. Data collection period is 4 weeks only.
3. The investigator found difficulty to stick over the time schedule due to doctor rounds.

## RECOMMENDATIONS

The study recommends the following for further research,

1. The study can be replicated with larger samples for better generalization
2. The study can be done for peritoneal dialysis patients also
3. The study can be conducted on patients with pain due to other type of cannulation.
4. The study can be conducted to assess the attitude and practice among nurses posted in hemodialysis unit .
5. A comparative study can be conducted between pharmacological and non- pharmacological intervention

## CONCLUSION

The purpose of this study was used to assess the effectiveness of cryotherapy on arteriovenous fistula puncture pain among patients on hemodialysis in Gastro Care Hospital, Trichy . From the above findings it is evident that the cryotherapy is very effective in reduction of arteriovenous fistula puncture pain among patients on hemodialysis.

On the whole, carrying out the present study was really an enriching experience to the investigator. It also helped a great deal to explore improve the knowledge of the researcher and the respondents. The constant encouragement and guidance by the guide, co operation and the interest of the respondents in the study contributed to the successful completion of the study .

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## ANNEXURE I

## LETTER SEEKING PERMISSION FOR RESEARCH PURPOSE

From

301411702,
II Year M.Sc. Nursing,
Thanthai Roever College of Nursing,
Perambalur.

To

The Medical Administrator**,**
Gastro Care Hospital,
Trichy**.**

**Respected Madam/Sir,**

I am doing M.Sc., (Nursing) II year in Thanthai Roever College of Nursing Perambalur. Under the TAMILNADU Dr.M.G.RMEDICAL UNIVERSITY CHENNAI. As a partial fulfillment of my M.Sc., (NURSING) Degree Programme, I am going to conduct "**A Study to Assess the Effectiveness of Cryotherapy on ArterioVenous Fistula Puncture Pain among Patients on Hemodialysis.** I would like to conduct the data collection at your esteemed institution. Hence, I request you to kindly grant me permission to conduct my study in your Hospital.

Thanking you

Place: Yours Sincerely,
Date: **(**301411702**).**

## ANNEXURE II

## LETTER SEEKING EXPERT'S OPINION FOR CONTENT VALIDITY

From

301411702
M.Sc., (Nursing) II Year,
Thanthai Roever College of Nursing,
Perambalur.

To

**Respected Madam/Sir,**

Subject : Requisition for content validity of tool .

I am doing M.Sc., (Nursing) II year in Thanthai Roever College of Nursing Perambalur, under the TAMILNADU Dr.M.G.R. MEDICAL UNIVERSITY CHENNAI . As a partial fulfillment of my M.Sc., (NURSING) Degree Programme, I am doing a dissertation on "**A Study to Assess the Effectiveness of Cryotherapy on Arteriovenous Fistula puncture pain among Patients on Hemodialysis "at gastro care hospital.** May I request you to give your expert and valuable opinion for the validity of research tool what I have developed. I will be thankful for your kind consideration.

Thanking you

Place: Yours Sincerely,
Date: 301411702.

## ANNEXURE III

## CRITERIA CHECK LIST FOR VALIDATION OF THE TOOL

Respected madam,

Kindly review the item in the tool and if agree the criteria make a tick in relevant column otherwise , place a tick need modification column, or make not relevant and kindly give your valuable comment in the remarks column.

**PART-I DEMOGRAPHIC DATA**

| S.NO | RELEVANT | MODIFY | IRRELEVANT | REMARKS |
|---|---|---|---|---|
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |
| 6. | | | | |
| 7. | | | | |

## ANNEXURE IV

## LIST OF EXPERT'S OPINION FOR CONTENT VALIDITY

1. **Prof.R.Punithavathi.M.sc.(N).,**
   Principal,
   Thanthai Roever College of Nursing,
   Perambalur.

2. **Prof.V.J.Elizabeth.M.sc.(N).,**
   Vice principal,
   Thanthai Roever College of Nursing,
   Perambalur.

3. **Dr .Rajina Rani.M.sc.(N),ph.D.,**
   Principal,
   Rasu Academy,
   Poovanthi.

4. **Prof.M.Shanthi.M.sc.(N).,**
   Dr.G.Sakunthala College of Nursing,
   Trichy.

5. **Prof.k.S.Puspalatha.M.sc.(N).**
   Shanmuga College of Nursing,
   Salem.

## ANNEXURE V

## CONTENT VALIDITY CERTIFICATE

This is to certify that the tool for **AN EXPERIMENTAL STUDY TO ASSESSS THE EFFECTIVENESS OF CRYOTHERAPY ON ARTERIOVENOUS FISTULA PUNCTURE PAIN AMONG PATIENTS ON HEMODIALYSIS IN SELECTED HOSPITAL AT TRICHY"** prepared by 301411702 II year M.sc. nursing, student of Thanthai Roever college of nursing, Perambalur found to be valid and up to date

**Name :** **Signature of the expert**

**Place :**

**Date :**

**Designation and address**

## ANNEXURE VI

## CERTIFICATE OF ENGLISH EDITING

## TO WHOMSOEVER IT MAY CONCERNS

This is to certify that the dissertation work **AN EXPERIMENTAL STUDY TO ASSESSS THE EFFECTIVENESS OF CRYOTHERAPY ON ARTERIOVENOUS FISTULA PUNCTURE PAIN AMONG PATIENTS ON HEMODIALYSIS IN SELECTED HOSPITAL AT TRICHY** done by 301411702 II year M.sc. nursing, in Thanthai Roever College of Nursing, Perambalur is edited for English language appropriateness.

**Signature**

# ANNEXURE VII

## ஒப்புதல் படிவம்

தந்தை ரோவர் செவிலியர் கல்லூரியில் முதுகலை செவிலிய பட்டப்படிப்பு பயிலும் **301411702** அவர்களால் நடத்தப்படுகின்ற குளிர் ஒத்தடம் கொடுப்பதின் மூலம் டயாலிஸ்ன் போடப்படுகின்ற ஊசியினால் ஏற்படும் வலியை குறைக்கும் ஆராய்ச்சி நோக்கத்தினைப் பற்றியும் சிகிச்சை பற்றிய விளக்கமும் எனக்கு தெளிவாக தெரிவிக்கப்பட்டது இதில் பங்கேற்பதற்கு எனக்கு எந்த ஆட்சேபணையும் இல்லை. மேலும் இந்த விவரங்களை வெளியிடுவதற்கும், அச்சிடுவதற்கும் முழு சம்மதம் அளிக்கிறேன்.

கையெழுத்து

பெயர்:

தேதி:

இடம்:

## ANNEXURE VIII

## DATA COLLECTION TOOL

## SECTION A DEMOGRAPHIC VARIABLES

**Kindly furnish the following details by placing a tick (✓) mark in appropriate choice**

1) Age in years

a) 21 – 30 ☐ b) 31 - 40 ☐

c) 41 – 50 ☐ d) 51 – 60 ☐

e) 61 – 70 ☐

2) Gender

a) male ☐ b) female ☐

3) Habits

a) smoking ☐ b) alcohol ☐

c) tobacco ☐ d) none ☐

4) Duration of chronic kidney disease

a)< 1 year ☐ b)1-3 years ☐

c)>3 years ☐

5) Frequency of dialysis per week

a) once ☐ b) twice ☐

c) thrice ☐

6) Duration of arteriovenous fistula

a) < 6months ☐ b) 6 months - 1 year ☐

c) >1 year ☐

7) Perception of previous experiences of arteriovenous fistula puncture pain

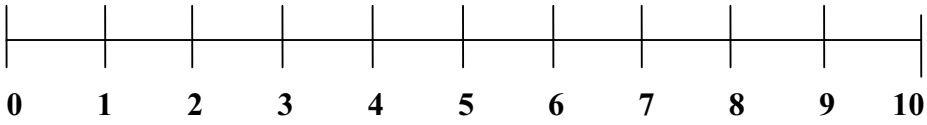
a)no pain ☐ b ) mild pain ☐

c)moderate pain ☐ d) severe pain ☐

## SECTION –B

## NUMERICAL PAIN SCALE

**Choose the level of Present Pain**




**No Pain** **Worst Pain**

| SCORE | LEVEL OF PAIN |
|---|---|
| 0 | No pain |
| 1 to 3 | Mild pain |
| 4 to 6 | Moderate pain |
| 7 to 10 | Severe pain |